

REMARKS

Claims 1-20 are pending in the present application.

Initially, the Examiner is respectfully requested to acknowledge Applicants' claim for foreign priority and to indicate that all the certified copy of the priority document has been received.

Claims 1-20 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Autran (US 2003/0204027) in view of Shimizu (US 2002/0173583) taken with McGraw "New Uses for Kenaf."

Applicants submit that this rejection should be withdrawn because Autran, Shimizu and McGraw do not disclose or render obvious the composition or molded product of the present invention, either alone or in combination.

In the Amendment filed November 5, 2007, Applicants explained that Autran does not teach a filler being made of kenaf fibers and does not teach positively adding fillers to the composition. Shimizu and McGraw do not intend biodegradability, or suggest the unexpected results of the present invention obtained by adding the kenaf fiber. Therefore, from the combination of Autran, Shimizu and McGraw, one skilled in the art would not arrive at the present invention and the unexpected results thereof. Thus, Autran, Shimizu and McGraw do not suggest that a plant origin biodegradable composition and a molded product thereof being excellent in processability, strength, impact resistance, heat resistance and water resistance at the same time can be obtained by the constitution of present invention in which kenaf fibers are present. These references do not disclose or suggest a composition and a molded product thereof which are improved in rate of crystallization, heat resistance and impact resistance by adding

kenaf fibers. Accordingly, the present invention is unobvious over the combination of Autran, Shimizu and McGraw.

In the Office Action, the Examiner has stated:

“Applicant’s argument that the references fail to teach the improvement in the rate of crystallization and other properties is not persuasive. Mere allegations of unexpected results are not enough to differentiate the instant invention from the applied references. Improvements in properties will naturally occur due to a combination of materials. This does not show that the result is unexpected, even in cases with a synergistic relationship. In order to show unexpected results, applicant must provide clear and convincing evidence that the result is unexpected, not merely a foreseeable improvement in the property.”

Accordingly, Applicants provide herewith some documents to show that the results provided by the present invention are unexpected.

As shown in the table below, which summarizes the attached documents and the partial English translations thereof, it is necessary to choose suitable nucleating agents based on polymers. That is, a nucleating agent which is suitable for one polymer is not always suitable for another polymer. Therefore, it requires efforts and experiments to select a suitable nucleating agent for each polymer. Accordingly, even if McGraw only discloses the use of kenaf in a composition, one skilled in the art would not have conceived of employing kenaf of McGraw in the composition of Autran to achieve improved rate of crystallization, excellent heat resistance, impact resistance, processability, strength, and water resistance provided by the present invention.

Polymer	Document	Nucleating agents
PHA *1	JP 03-24151 A	talc, micronized mica, boron nitride, calcium carboate
	JP 06-345950 A	aromatic amino acid (tylosin)
	JP 06-264306 A	boron nitride, titanium dioxide
	“Degradable...” *3	boron nitride, talc
	“Biopolymers...” *4	talc, micronized mica, boron nitride, chalk, calcium hydroxyapatite, calcium carbonate, saccharin, NH ₄ Cl, cyclohexyl phosphonic acid, zinc stearate
PP *2	JP 52-5935 B	dibenzal sorbitol
	“Polypropylene...” *5	organic carboxylic acid, sodium benzoate, basic aluminum dibenzoate

*1: PHA: polyhydroxyalkanoate

*2: PP: polypropylene

*3: Degradable Plastics, Technical Research Report, No. 2, p.268, Y. Doi, Sep. 28, 1990

*4: Biopolymers, Vol. 4, Polyesters III, pp. 67-69, WILEY-VCH, Oct., 2001

*5: Polypropylene resin, p. 54, Nikkan Kogyo Shinbunsha, Jan. 30, 1981

Partial English translation of the documents

(1) JP 03-24151 A

*page 4, upper left column, lines 6-3 from the bottom

As a substance used for nucleating in the HB (hydroxybutylate) polymer, a granular material such as talc, micronized mica, boron nitride and calcium carbonate is exemplified.

(2) JP 06-345950 A

*page 3, column 4, lines 5-7

It was found that aromatic amino acid, especially tylosin, showed higher crystallization rate than boron nitride to be a good nucleating agent.

(3) JP 06-264306 A

*page 3, column 3, lines 14-16

It is preferable to contain a nucleating agent such as boron nitride and titanium dioxide in an amount of 0.1-5.0% by weight and preferably 0.5-2.0% by weight in poly(β -hydroxyalkanoate).

(4) Degradable Plastics

*page 268, lines 2-1 from the bottom

By adding a nucleating agent such as boron nitride and talc, the nucleating density of Biopol homopolymer (PHB) or copolymer is increased and handling of the polymer mixture becomes easier.

(5) JP 52-5935 B

*page 1, column 1, lines 29-34

When dibenzal sorbitol is added to polypropylene resin and the mixture is melted for forming, the obtained product does not have sink on the surface to be valuable as a product. Therefore, a size stability is extremely increased to be useful for reducing the cost.

(6) Polypropylene resin

*page 54, lines 9-11

Beck searched the ability of various materials as nucleating agents and found that organic carboxylic acids, especially sodium benzoate and basic aluminum dibenzoate, are effective.

In view of the above, it is clear that the results of using various nucleating agents is not specifically predictable, and selecting an appropriate nucleating agent is not a simple matter. Accordingly, reconsideration and withdrawal of the § 103(a) rejection based on Autran in view of Shimizu and McGraw is respectfully requested.

Allowance is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.


Respectfully submitted,

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER


Hui C. Wauters
Registration No. 57,426

Date: May 27, 2008